WHAT IS CLAIMED IS:

1. A process for making an aqueous emulsion of self-emulsifiable polyolefin which comprises the steps of:

(a) providing a mixture of :

1. at least one polyolefin possessing a first reactive functionality and having a weight average molecular weight of at least about 30,000; and

2. at least one hydrophilic polymer possessing a second reactive functionality being reactive with the first reactive functionality of polyolefin (1) and having a weight average molecular weight less than that of polyolefin (1); and

(b) heating the mixture of step (a) to a temperature at or above the melting point of polyolefin (1), first reactive functionality of polyolefin (1) reacting with second reactive functionality of hydrophilic polymer (2) at said temperature to provide a self-emulsifiable polyolefin; and

(c) adding an emulsion-forming amount of water to the self-emulsifiable polyolefin of step (b) to provide an aqueous emulsion of the self-emulsifiable polyolefin.

2. The process of Claim 1 wherein the polyolefin (1) and the hydrophilic polymer (2) are present in an amount sufficient to provide a ratio of first reactive functionality to second reactive functionality of from about 3:2 to about 1:3.

3. The process of Claim 1 wherein the functionality of polyolefin (1) and the functionality of hydrophilic polymer (2), each is a different coreactive functionality selected from the group consisting of carboxylic acid and carboxylic acid anhydride.

4. The process of Claim 3 wherein functionality of polyolefin (1) is present as grafted maleic anhydride in an amount of at least about 0.5 wt. percent of polyolefin (1).

5. The process of Claim 3 wherein the functionality of polyolefin (1) is present as grafted maleic anhydride in an amount of from about 1 to about 1.5 wt percent of polyolefin (1).

6. The process of Claim 3 wherein the functionality of hydrophilic polymer (2) is present as grafted maleic anhydride in an amount of at least about 3 wt percent of hydrophilic polymer (2).

7. The process of Claim 3 wherein the carboxylic acid functionality hydrophilic polymer (2) is present as grafted maleic anhydride in an amount of from about 5 to about 7 wt percent of hydrophilic polymer (2).

8. The process of Claim 1 wherein polyolefin (1) has a weight average molecular weight of at least about 50,000.

9. The process of Claim 1 wherein polyolefin (1) is at least one member selected from the group consisting of functionalized polyethylene, functionalized polypropylene, functionalized copolymer of ethylene and at least one other alpha-olefin and functionalized terpolymer of ethylene, propylene and at least one diene monomer.

10. The process of Claim 9, wherein the functionalized polypropylene is a functionalized isotactic polypropylene.

11. The process of Claim 9 wherein the functionalized terpolymer of ethylene, propylene and at least one diene monomer is a functionalized terpolymer of ethylene, propylene and butadiene.

12. The process of Claim 1 wherein the hydrophilic polymer (2) has a weight average molecular weight of less than about 10,000.

13. The process of Claim 12 wherein the hydrophilic polymer (2) is at least one member of the group consisting of polymers of ethylene oxide, polymers of propylene oxide, copolymers of ethylene oxide and propylene oxide, mono-alkyl ethers of polyethylene oxide and alkyl ether amines.

14. The process of Claim 13 wherein hydrophilic polymer (2) is a polyethylene glycol or derivatives thereof having a weight average molecular weight of from about 300 to about 4000.

15. The process of Claim 13 wherein hydrophilic polymer (2) is a poly(oxyethylene-co-oxypropylene) ether glycol or derivatives thereof having a weight average molecular weight of from about 500 to about 2000.

16. The process of Claim 1 wherein the polyolefin (1) is at least one member selected from the group consisting of polyethylene, polypropylene, copolymer of ethylene and propylene and copolymer of ethylene, propylene and at least one other olefinic monomer, and hydrophilic polymer (2) is at least one member selected from the group consisting of polymers of ethylene oxide, polymers of propylene oxide and copolymers of ethylene oxide and propylene oxide.

17. The process of Claim 16 wherein the functionality of polyolefin (1) and the functionality of hydrophilic polymer (2) each is a different coreactive functionality selected from the group consisting of carboxylic acid and carboxylic acid anhydride.

18. The process of Claim 16 wherein polyolefin (1) has a weight average molecular weight of at least about 50,000 and hydrophilic polymer (2) has a weight average molecular weight of less than about 10,000.

19. The process of Claim 1 wherein the mixture of step (a) contains from about 30 to about 90 wt. percent of polyolefin (1), from about 5 to about 50 wt. percent

hydrophilic polymer (2) and the emulsion-forming amount of water added in step (c) is from about 30 to about 85 wt. percent.

20. The process of Claim 1 wherein the mixture of step (a) contains from about 50 to about 70 wt. percent of polyolefin (1), from about 10 to about 30 wt. percent hydrophilic polymer (2) and the emulsion-forming amount of water added in step (c) is from about 50 to about 70 wt. percent.

21. The process of Claim 20 wherein the mixture of step (a) optionally contains a low molecular weight functionalized polyolefin.

22. The process of Claim 21 wherein the optional low molecular weight functionalized polyolefin is from about 0 to about 50 wt. percent of the mixture of step (a).

23. The process of Claim 16 wherein the mixture of step (a) contains from about 30 to about 90 wt. percent of polyolefin (1), from about 5 to about 50 wt. percent hydrophilic polymer (2) and the emulsion-forming amount of water added in step (c) is from about 30 to about 85 wt. percent.

24. The process of Claim 16 wherein the mixture of step (a) contains from about 50 to about 70 wt. percent of polyolefin (1), from about 10 to about 30 wt. percent

hydrophilic polymer (2) and the emulsion-forming amount of water added in step (c) is from about 50 to about 70 wt. percent.

25. The process of Claim 24 wherein the mixture of step (a) optionally contains a low molecular weight functionalized polyolefin.

26. The process of Claim 25 wherein the optional low molecular weight functionalized polyolefin is from about 0 to about 50 wt. percent of the mixture of step (a).

27. The aqueous emulsion resulting from the process of Claim 1.

28. The aqueous emulsion of Claim 27 wherein the average particle size of the emulsified self-emulsifiable polyolefin ranges from about 0.1 to about 10 microns and the viscosity of the emulsion ranges from about 10 to about 10,000 cps.

29. The aqueous emulsion of Claim 27 wherein the average particle size of the emulsified self-emulsifiable polyolefin ranges from about 0.2 to about 5 microns and the viscosity of the emulsion ranges from about 20 to about 1000 cps.

30. An aqueous emulsion of self-emulsifiable polyolefin which comprises the reaction product of at least one polyolefin (1) possessing a first reactive functionality and having a weight average molecular weight of at least about 30,000 and at least one 2

hydrophilic polymer (2) possessing a second reactive functionality which is reactive with the first reactive functionality of polyolefin (1) and having a weight average molecular weight of less than that of polyolefin (1), and water in an aqueous emulsion-forming amount.

31. The aqueous emulsion of Claim 30 wherein polyolefin (1) and hydrophilic polymer (2) are present in an amount sufficient to provide a ratio of first reactive functionality to second reactive functionality of from about 3:2 to about 1:3.

32. The aqueous emulsion of Claim 30 wherein the functionality of polyolefin (1) and the functionality of hydrophilic polymer (2) each is a different coreactive functionality selected from the group consisting of carboxylic acid, and carboxylic acid anhydride.

33. The aqueous emulsion of Claim 30 wherein the average particle size of the emulsified self-emulsifiable polyolefin ranges from about 0.1 to about 10 microns and the viscosity of the emulsion ranges from about 10 to about 10,000 cps.

34. The aqueous emulsion of Claim 30 wherein the average particle size of the emulsified self-emulsifiable polyolefin ranges from about 0.2 to about 5 microns and the viscosity of the emulsion ranges from about 20 to about 1000 cps.

35. A process for making a hybrid aqueous dispersion of self-emulsifiable polyolefin and polyurethane which comprises: 3

a) providing at least one water-dispersible polyurethane prepolymer;

b) dispersing the water-dispersible polyurethane prepolymer of step (a) in at least one aqueous emulsion of self-emulsifiable polyolefin prepared by the process of Claim 3 to provide a hybrid aqueous dispersion of the water-dispersible polyurethane prepolymer and self-emulsifiable polyolefin; and,

c) adding at least one difunctional chain extender to the hybrid aqueous dispersion of step (b).

36. The process of Claim 35 wherein the water-dispersible polyurethane prepolymer is prepared by reacting, (a) a mixture of active hydrogen functionality-containing compound selected from at least one member of the group consisting of (i) hydrocarbon polymer containing at least one terminal hydroxyl group, (ii) hydrophilic group-containing diol and, optionally, (iii) at least one member of the group consisting of polymeric polyol, low molecular weight diol, monofunctional reactant and trifunctional or higher functionality branching reactant, with (b) at least one diisocyanate.

37. A process for making a hybrid aqueous dispersion of self-emulsifiable polyolefin and polyurethane which comprises: 4

a) providing at least one water-dispersible polyurethane prepolymer;

b) dispersing the water-dispersible polyurethane prepolymer of step (a) in at least one aqueous emulsion of self-emulsifiable polyolefin prepared by Claim 32 to

provide a hybrid aqueous dispersion of the water-dispersible polyurethane prepolymer and self-emulsifiable polyolefin; and,

c) adding at least one difunctional chain extender to the hybrid aqueous dispersion of step (b).

38. The process of Claim 37 wherein the water-dispersible polyurethane prepolymer is prepared by reacting, (a) a mixture of active hydrogen functionality-containing compound selected from at least one member of the group consisting of (i) hydrocarbon polymer containing at least one terminal hydroxyl group, (ii) hydrophilic group-containing diol and, optionally, (iii) at least one member of the group consisting of polymeric polyol, low molecular weight diol, monofunctional reactant and trifunctional or higher functionality branching reactant, with (b) at least one diisocyanate.

39. The process of Claim 38 wherein hydrocarbon polymer (i) is obtained from the polymerization of at least one olefinic monomer.

40. The process of Claim 38 wherein hydrocarbon polymer (i) is hydroxyl-terminated polybutadiene or hydrogenated derivative thereof.

41. The process of Claim 38 wherein hydrophilic group-containing diol (ii) is at least one member selected from the group consisting of ionic group-containing compound, potential ionic group-containing compound, lateral ionic group-containing

compound, terminal nonionic hydrophilic group-containing compound, anionic group-containing compound and cationic group-containing compound.

42. The process of Claim 41 wherein the terminal nonionic hydrophilic group-containing compound is a polyethyleneoxide and the ionic group-containing compound is at least one member selected from the group consisting of carboxylate compound, sulfonate compound and quartenary nitrogen compound.

43. The process of Claim 41 wherein the ionic group-containing compound is a dihydroxy alkanoic acid.

44. The process of Claim 43 wherein the dihydroxy alkanoic acid is at least one member selected from the group consisting of dimethylol propionic acid and dimethylol butanoic acid.

45. The process of Claim 38 wherein the polymeric polyol (iii) is at least one member selected from the group consisting of polyester diol, polyether diol, polyetherester diol, polyesterether diol, polythioester dithiol, polycarbonate diol, polyacetal diol and polycaprolactone polyol.

46. The process of Claim 38 wherein low molecular weight diol (iii) is a short chain aliphatic diol.

47. The process of Claim 46 wherein the short chain aliphatic diol is trimethylolpropane.

48. The process of Claim 40 wherein the diisocyanate is of the general formula $R(NCO)_2$ wherein R is selected from the group consisting of divalent aliphatic group containing from 4 to about 18 carbon atoms and divalent cycloaliphatic group containing from 5 to about 15 carbon atoms.

49. The process of Claim 48 wherein the diisocyanate is at least one member selected from the group consisting of hexamethylene diisocyanate, cyclohexane-1, 3-diisocyanate, cyclohexane -1, 4-diisocyanate, 1-isocyanato-3-isocyanatomethyl-3, 5, 5-trimethyl-cyclohexane, bis-(4-isocyanatocyclohexyl) methane; 1, 3-bis-(isocyanatomethyl) cyclohexane, 1, 4-bis-(isocyanatomethyl) cyclohexane and bis-(4-isocyanato-3-methyl-cyclohexyl) methane.

50. The process of Claim 37 wherein the difunctional chain extender is at least one diamine selected from the group consisting of hydrazine, adipic dihydrazide, ethylene diamine, hexane diamine, diisophorone diamine, polyoxypropylene diamine, 2-methyl pentane diamine and piperazine.

51. The process of Claim 37 wherein during chain-extending step (c) the difunctional chain extender optionally includes a trifunctional amine, an alcohol amine or mixtures thereof.

52. The process of Claim 38 wherein the ratio of isocyanate groups in the diisocyanate to active hydrogen group functionality in the active hydrogen group-containing compound is from about 1.1 to about 3 on an equivalent basis.

53. The process of Claim 38 wherein the ratio of isocyanate groups in the diisocyanate, to active hydrogen functionality in the active hydrogen functionality containing compound, is from about 1.2 to about 2 on an equivalent basis.

54. The polyolefin-polyurethane hybrid aqueous dispersion resulting from the process of Claim 35.

55. The polyolefin-polyurethane hybrid aqueous dispersion resulting from the process of Claim 36.

56. The polyolefin-polyurethane hybrid aqueous dispersion resulting from the process of Claim 37.

57. The polyolefin-polyurethane hybrid aqueous dispersion resulting from the process of Claim 38.

58. A hybrid aqueous dispersion of self-emulsifiable polyolefin and polyurethane prepolymer which comprises:

a) at least one chain-extended water-dispersable polyurethane prepolymer;

b) at least one aqueous emulsion of self-emulsifiable polyolefin prepared by the process of Claim 1, the chain-extended water-dispersible polyurethane prepolymer being dispersed therein.

59. The hybrid aqueous dispersion of Claim 58 wherein the functionality of the self-emulsifiable polyolefin is, or contains, active hydrogen functionality such that the chain-extended water-dispersable polyurethane reacts with the active hydrogen functionality to provide a hybrid aqueous dispersion of self-emulsifiable polyolefin and polyurethane.

60. The hybrid aqueous dispersion of Claim 59 wherein the active hydrogen functionality is at least one member selected from the group consisting of carboxylic acid and carboxylic acid anhydride.

61. A hybrid aqueous dispersion of polyolefin and polyurethane prepolymer which comprises:

a) at least one chain-extended water-dispersable polyurethane prepolymer;

b) at least one aqueous emulsion of polyolefin of Claim 30, the chain-extended water-dispersible polyurethane prepolymer being dispersed therein.

62. The polyolefin-polyurethane hybrid aqueous dispersion of Claim 61 wherein the functionality of functionalized polyolefin contains active hydrogen such that the chain-extended water-dispersable polyurethane reacts with the active hydrogen-containing functionality to provide a hybrid aqueous dispersion of functionalized polyolefin and polyurethane.

63. The polyolefin-polyurethane hybrid aqueous dispersion of Claim 62 whereas the active hydrogen-containing functionality is at least one member selected from the group consisting of carboxylic acid, carboxylic acid anhydride, amine and hydroxyl.

64. A polymeric substrate coated with the polyolefin-polyurethane hybrid aqueous dispersion of Claim 54.

65. A polymeric substrate coated with the polyolefin-polyurethane hybrid aqueous dispersion of Claim 55.

66. A polymeric substrate coated with the polyolefin-polyurethane hybrid aqueous dispersion of Claim 56.

67. A polymeric substrate coated with the polyolefin-polyurethane hybrid aqueous dispersion of Claim 57.

68. A polymeric substrate coated with the polyolefin-polyurethane hybrid aqueous dispersion of Claim 58.